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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/836,202	04/18/2001	Yoshinori Kanesaka	109304	6501

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EXAMINER	
AGGARWAL, YOGESH K	
ART UNIT	**PAPER NUMBER**
2615	

DATE MAILED: 05/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/836,202	KANESAKA, YOSHINORI	
	Examiner	Art Unit	
	Yogesh K. Aggarwal	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 March 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *4-6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *4-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Response to Arguments

1. Applicant's arguments filed 03/03/2005 have been fully considered but they are not persuasive.

Examiner's response:

2. Applicant argues that Arafune teaches in figures 6 and 7 that subsequent scans do not read pixel data at different times from same position. Applicant further argues that the office action asserts that col. 6 lines 16-63 discloses this feature while this feature is not taught there (Amendment, pp 6 and 7). The Examiner respectfully disagrees. Arafune teaches in col. 6 lines 24-30 that figure 7 discloses a full line that represents the position of pixel data obtained by the first-time scanning. A dotted line represents the position of pixel data obtained by the second-time scanning. This feature is more clearly shown in figure 9 as a plurality of pixel data sets D1(x,y), D1(x+1,y), D1(x+2,y) represented as a pixel train S11 obtained by the first time scanning and D2(x,y), D2(x+1,y) ,D2(x+2,y) represented as a pixel train S12 obtained by the second time scanning. Therefore we have plurality of pixel data sets representing plural data having been read at different times (first and second time scanning) from the same position (Reference symbol D1(x,y) denotes the x-th pixel data obtained on the y-th line during the first-time scanning. Reference symbol D2(x,y) denotes the x-th pixel data obtained on the y-th line during the second-time scanning). Arafune teaches that these pixels are added and averaged (col. 6 lines 31-32) and is more clearly shown in figure 9 as pixel data sets S31. Therefore Arafune does teach the claimed limitation "an averaging device that subjects to an averaging operation a plurality of pixel data sets which are stored in the pixel data storage device, the plurality of pixel data sets representing pixel data having been read at different times from the same position".

3. Applicant further argues that there is no reason or motivation to combine Arafune with Hasegawa (Amendment pp7, Bottom). The examiner respectfully disagrees. Arafune discloses a color CCD 106 (figure 3) with plurality of image pickup elements having RGB output but fails to disclose that each image pick up elements are arranged such that respective image pickup elements match in position in a direction in which the image pickup elements are arranged. However Hasegawa teaches a color image pickup element (figure 6), comprising groups of image pickup elements (figure6, elementsl7o4a-c, 1706a-c, 1708a-c) provided for a plurality of colors (Red, green and blue), each image pickup element group including a plurality of image pickup elements linearly arranged in rows on a substrate, wherein a row of image pickup elements (figure 6, element 1704a) in the image pickup element group (Red color) and another row (figure 6, element 1704b) of image pickup elements in the same image pickup element group (red) are arranged such that respective image pickup elements match in position in order to have an increased S/N ratio as taught in Hasegawa (col. 2 lines 45-64).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arafune et al. (US Patent # 6,633,415) in view of Hasegawa et al. (US Patent # 5,917,620).

[Claim 3]

Arafune et al. teaches a color CCD (figure 15, element 150), a light source illuminating (figure 15, element 144) an original (figure 15, element 142), a plurality of mirrors (figure 15, element 147-148) reflecting light which has originated from the light source and has been reflected from or passed through the surface of the original (figure 15), a light-gathering lens (figure 15, element 149) gathering the light reflected from the mirrors (figure 15, elements 147 and 148) onto the color image pickup element (col. 12 lines 35-52, figure 15, element 150), an analog-to-digital conversion section (figure 8, element 42) subjecting to analog-to-digital conversion pixel data output from the color image pickup element, a pixel data storage device (figure 8, elements 43 and 44) storing pixel data which have been subjected to analog-to-digital conversion by the analog-to-digital conversion section, and an averaging device (col. 6 lines 32-40 disclose adding and averaging operations, figure 8, elements 48-49) subjecting to averaging operation a plurality of pixel data sets which are stored in the pixel data storage device, have been read at different times from the same position with reference to a direction in which image pickup elements of the respective image pickup element rows are arranged, and outputs a result of averaging operation as one set of pixel data (col. 6 lines 16-63, more specifically col. 6 lines 20-40, figures 7, 8 and 9). Arafune teaches a color image pickup element but fails to teach a color image pickup element comprising groups of image pickup elements provided for a plurality of colors, each image pickup element group including a plurality of image pickup elements linearly arranged in rows on a substrate, wherein a row of image pickup elements in the image pickup element group and another row of image pickup elements in the same image pickup element group are arranged such that respective image pickup elements match in position in a direction in which the image pickup elements are arranged. However Hasegawa teaches a color image pickup element (figure

6), comprising groups of image pickup elements (figure6, elements1704a-c, 1706a-c, 1708a-c) provided for a plurality of colors (Red, green and blue), each image pickup element group including a plurality of image pickup elements linearly arranged in rows on a substrate, wherein a row of image pickup elements (figure 6, element 1704a) in the image pickup element group (Red color) and another row (figure 6, element 1704b) of image pickup elements in the same image pickup element group (red) are arranged such that respective image pickup elements match in position in a direction in which the image pickup elements are arranged. Therefore taking the combined teachings of Arafune and Hasegawa, it would have been obvious to one skilled in the art at the time of the invention to have been motivated to have color image pickup element comprising groups of image pickup elements provided for a plurality of colors, each image pickup element group including a plurality of image pickup elements linearly arranged in rows on a substrate, wherein a row of image pickup elements in the image pickup element group and another row of image pickup elements in the same image pickup element group are arranged such that respective image pickup elements match in position in a direction in which the image pickup elements are arranged in order. The benefit of doing so would be to have an increased reading speed along with increased S/N ratio as taught in Hasegawa (col. 2 lines 45-64).

[Claim 4]

Arafune et al. teaches a color CCD (figure 15, element 150), a light source illuminating (figure 15, element 144) an original (figure 15, element 142), a plurality of mirrors (figure 15, element 147-148) reflecting light which has originated from the light source and has been reflected from or passed through the surface of the original (figure 15), a light-gathering lens (figure 15, element 149) gathering the light reflected from the mirrors (figure 15, elements 147 and 148)

onto the color image pickup element (col. 12 lines 35-52, figure 15, element 150), an analog-to-digital conversion section (figure 8, element 42) subjecting to analog-to-digital conversion pixel data output from the color image pickup element, a pixel data storage device (figure 8, elements 43 and 44) storing pixel data which have been subjected to analog-to-digital conversion by the analog-to-digital conversion section, and an adding device (col. 6 lines 32-40 disclose adding and averaging operations, figure 8, elements 48-49) subjecting to adding operation a plurality of pixel data sets which are stored in the pixel data storage device, have been read at different times from the same position with reference to a direction in which image pickup elements of the respective image pickup element rows are arranged, and outputs a result of adding operation as one set of pixel data (col. 6 lines 16-63, more specifically col. 6 lines 20-40, figures 7, 8 and 9). Arafune teaches a color image pickup element but fails to teach a color image pickup element comprising groups of image pickup elements provided for a plurality of colors, each image pickup element group including a plurality of image pickup elements linearly arranged in rows on a substrate, wherein a row of image pickup elements in the image pickup element group and another row of image pickup elements in the same image pickup element group are arranged such that respective image pickup elements match in position in a direction in which the image pickup elements are arranged. However Hasegawa teaches a color image pickup element (figure 6), comprising groups of image pickup elements (figure6, elements1704a-c, 1706a-c, 1708a-c) provided for a plurality of colors (Red, green and blue), each image pickup element group including a plurality of image pickup elements linearly arranged in rows on a substrate, wherein a row of image pickup elements (figure 6, element 1704a) in the image pickup element group (Red color) and another row (figure 6, element 1704b) of image pickup elements in the same

image pickup element group (red) are arranged such that respective image pickup elements match in position in a direction in which the image pickup elements are arranged. Therefore taking the combined teachings of Arafune and Hasegawa, it would have been obvious to one skilled in the art at the time of the invention to have been motivated to have color image pickup element comprising groups of image pickup elements provided for a plurality of colors, each image pickup element group including a plurality of image pickup elements linearly arranged in rows on a substrate, wherein a row of image pickup elements in the image pickup element group and another row of image pickup elements in the same image pickup element group are arranged such that respective image pickup elements match in position in a direction in which the image pickup elements are arranged in order. The benefit of doing so would be to have an increased reading speed along with increased S/N ratio as taught in Hasegawa (col. 2 lines 45-64).

[Claims 5 and 6]

This is a method claim corresponding to apparatus claims 3 and 4. Therefore it has been analyzed and rejected based upon apparatus claim 3 and 4.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yogesh K. Aggarwal whose telephone number is (571) 272-7360. The examiner can normally be reached on M-F 9:00AM-5:30PM.

7. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Groody can be reached on (571) 272-7950. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

YKA
May 5, 2005

TUAN HO
PRIMARY EXAMINER